

Chapter 5

Indirect and Cumulative Effects

5.1 Introduction

This chapter discusses the indirect and cumulative effects associated with the Proposed Action. Under the Proposed Action, Applicants would divert many of the trains from CN's existing five subdivisions to the EJ&E rail line. Applicants would also gain control of the East Joliet Yard and Kirk Yard and would offer rail service to EJ&E's current freight customers. In addition, Applicants propose to construct six new connections and 19 miles of new double track. Three of the new connections are in Illinois (Munger near Wayne, Joliet and Matteson), and three are in Indiana (Griffith, Ivanhoe in Gary and Kirk Yard in Gary). The new double track would all be in Illinois at Leithton, Diamond Lake Road to Gilmer Road near Mundelein, East Siding to Walker near Plainfield, and East Joliet to Frankfort. All of the EJ&E rail line in Indiana is currently double track.

SEA analyzed the environmental consequences identified in Chapter 4 to determine if there would be any indirect effects caused by the Proposed Action and to determine if there would be any cumulative effects caused by the Proposed Action and related actions.

The sections in this Chapter are set forth as follows:

- Section 5.2 describes the methodology used,
- Section 5.3 assesses the general potential indirect effects of the Proposed Action and the potential indirect effects of increased activity at East Joliet Yard and Kirk Yard,
- Section 5.4 describes related projects and lists which projects that SEA has carried forward for cumulative effects analysis and which projects SEA has not carried forward,
- Section 5.5 analyzes the cumulative effects of related site-specific projects that SEA has carried forward for analysis,
- Section 5.6 analyzes system-wide cumulative effects

SEA has described in this chapter general potential indirect effects that could occur to the following:

- Land use and transportation systems along both the EJ&E rail line and the CN's lines
- Socioeconomic factors associated with rail activity near the yards with newly available capacity where CN's trains are currently classified
- Socioeconomic factors associated with increased economic opportunity for EJ&E's current freight customers
- Socioeconomic factors related to the ability of the northeast Illinois and northwest Indiana region to retain and enhance its position as a railroad center

This chapter sets forth SEA's conclusion that indirect effects are not likely to occur from the increased activity at East Joliet Yard and only minimal indirect effects are likely from the increased activity at Kirk Yard.

SEA identified related actions that are planned to occur either within the existing EJ&E right-of-way, immediately adjacent to the existing right-of-way or a new connection, or across the right-of-way to determine if cumulative effects could be expected. SEA analyzed the related actions that are expected to occur at specific locations and the actions that are expected to have system-wide effects.

SEA's analysis showed that the Proposed Action and the following site specific related actions could have cumulative effects:

- The Proposed Metra Star Line
- The Proposed Metra Star Line Commuter Stations
- Gary/Chicago International Airport Runway Extension

As discussed in detail below, the Proposed Action and the following site specific related actions are not anticipated to have cumulative effects.

- Highway improvement projects across the EJ&E rail line
- Pratt's Wayne Woods mining and reclamation project
- Existing and future plans for the Fermi National Accelerator Laboratory
- Illinois River EJ&E Movable Bridge
- Dunham Forest Preserve wetlands restoration project

As explained below, the Proposed Action and the related actions with potential cumulative effects are not anticipated to have cumulative effects on energy (fuel) use or air quality and climate.

5.2 Indirect and Cumulative Effects Methodology

Major infrastructure and transportation improvement projects can have effects that extend beyond the immediate area of the project. CEQ regulations define indirect effects as those "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable" (40 CFR 1508.8[b]). As to the cause and effect relationship between the project and the indirect effect, CEQ states that indirect effects may include induced changes to land use resulting in resource impacts (40 CFR 1508.8). Other indirect effects include the potential alteration of or encroachment on the affected environment. Examples of this include fragmentation of a habitat and functional effects on water resources.

For this proposed acquisition, some of the potential indirect effects would occur outside of the CN and/or EJ&E rail lines right-of-way (ROW), in some cases, the Proposed Action would take place within communities where other construction and improvement projects have recently been completed, are underway, or are planned for the future. When two or more major projects are located close to each other, there is the potential for the effects on resources to overlap or combine with the effects from the other projects, resulting in combined effects on resources that can be greater than those of the individual projects alone. These types of combined effects are referred to as "cumulative effects."

According to CEQ regulations for implementing NEPA, cumulative effects are defined as "[t]he impact on the environment which results from the incremental impact of the proposed action when added to other past, present and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7).

SEA developed the methodology for assessment of indirect effects and cumulative effects associated with the Proposed Action based on the Board's regulations for implementing NEPA, CEQ regulations and CEQ's *Considering Cumulative Effects under the National Environmental Policy Act* (Cumulative Effects Handbook). SEA's methodology also incorporated indirect effects and cumulative effects methodologies developed and applied in other EISs prepared by SEA in the past: *Proposed Conrail Acquisition Draft and Final Environmental Impact Statements* (Conrail EIS) and *Canadian National/Illinois Central Acquisition Draft and Final Environmental Assessments* (CN/IC EA).

5.2.1 Methodology

The Board's environmental regulations at 49 CFR 1105.7(e) set forth thresholds triggering environmental review under NEPA. Based on the number of additional trains Applicants have projected and comments the Board received during the EIS scoping process, SEA determined that all EJ&E rail line segments that would experience increased train traffic that trip the thresholds in the Board's environmental regulations. Therefore, in its evaluation of indirect effects and cumulative effects, SEA reviewed proposed projects, and related actions and activities on, adjacent to or related to all of the affected EJ&E rail line segments. For more information about the affected EJ&E rail line segments, see Table 2-7.

In order to identify and analyze possible indirect effects, SEA reviewed the effects of the Proposed Action on the relevant environmental impact categories studied in this Draft EIS to determine if those effects could lead to indirect effects. See the discussion of the potential environmental impacts of the Proposed Action in Chapters 3 and 4 of this Draft EIS. In considering indirect effects on the environmental impact categories, SEA followed CEQ guidance that directs agencies to focus only on the effects and resources within the context of the Proposed Action.

Pursuant to the Board's Final Scope of Study for the EIS, SEA examined the additional activities and proposed modifications that would occur at the EJ&E rail yards in East Joliet, Illinois and Gary, Indiana (Kirk Yard) for indirect effects.

In order to identify and analyze possible cumulative effects, SEA applied a four-step analysis, including:

- 1) Identify the environmental impact categories that could be affected by the Proposed Action;
- 2) Define temporal and spatial boundaries for analyzing the identified environmental impact categories for cumulative effects; (in this case geographic or spatial boundaries were generally apparent for each environmental impact category);
- 3) Identify past, existing, and proposed related projects or activities (related projects) from the following categories:
 - Other railroad operating activities that are not related to the Proposed Action, such as commuter rail expansion, and
 - Other local projects that SEA, federal or other public agencies, or the public identified
- 4) Assess potential cumulative effects by examining the probability of cumulative effects if the effects on environmental impact categories that would be caused by the Proposed Action were combined with the potential environmental effects of certain related projects. SEA used matrices to compare the combined effects to determine if they could result in cumulative effects. In addition, SEA examined system-wide cumulative effects.

SEA conducted extensive outreach activities to learn of local projects and activities that could result in cumulative effects. SEA held agency scoping meetings in Illinois and Indiana; met individually with Metra, Amtrak, and NICTD; conducted five stakeholder group meetings; and contacted local community governments, agencies, and citizen groups to solicit input regarding the local projects or activities that could interrelate with the Proposed Action and, by so-doing, result in cumulative effects.¹ SEA reviewed cumulative effects-related comments on the draft scope, and identified or received information regarding related projects that SEA evaluated. The environmental effects of most of the related projects that SEA or commenters identified either have not been studied at this time (Metra STAR Line) or would not be formally analyzed (mining reclamation project in Pratt's Wayne Woods Forest Preserve in DuPage County). In those cases, SEA identified and determined possible qualitative impacts and considered whether those impacts would likely combine with the potential effects of the Proposed Action. Where available, SEA reviewed related projects' environmental documents (for example, the Gary/Chicago International Airport EIS). After assessing potential cumulative effects, SEA reviewed them to determine whether any could cause effects that would warrant mitigation.

5.2.2 Scope of Indirect Effects and Cumulative Effects Analysis

In the Final Scope of Study, the Board indicated that the EIS indirect effects and cumulative effects analysis would:

- Address regional or system-wide ramifications
- Discuss potential environmental effects from proposed rail yard activities and modifications, and
- Evaluate other projects or activities that relate to the Proposed Action where SEA determines that there is the likelihood of significant impacts

On April 23, 2008,² in the Final Scope of Study for this EIS, SEA discussed comments received regarding the Draft Scope of Study that, when considered within the context of the Proposed Action, did not fall within the indirect effects and cumulative effects scope of analysis. It concluded that the proposed acquisition of the Dakota, Minnesota & Eastern Railroad Corporation (DM&E) and the Iowa, Chicago & Eastern Railroad Corporation (IC&E) by Canadian Pacific Railway Corporation (CP), which is currently pending before the Board in Finance Docket No. 35081, would not be evaluated for their potential cumulative effects related to the Proposed Action. SEA made this determination because in the DM&E/IC&E/CP proceeding the Board determined that sufficient information was not available at this point to conduct a meaningful review of the possible future movement of the DM&E coal traffic over the IC&E and/or CP rail lines, and therefore, such coal movements were not reasonably foreseeable.

In the Final Scope of Study, SEA also discussed comments on the Draft Scope suggesting that the EIS address possible effects of increased freight rail traffic on CN rail lines in Wisconsin. This additional traffic, the comments suggested, could result in increased impacts to safety and air quality in Wisconsin. However, SEA determined that its examination of indirect effects and cumulative effects should be geographically near the areas where direct effects to environmental resources related to the Proposed Action would occur. Therefore, SEA concluded that it should only analyze indirect effects

¹ Announcement on the **Chicago Metropolitan Agency for Planning** website during the week of May 19, 2008; see: <http://www.cmap.illinois.gov/news.aspx>.

² Surface Transportation Board, Finance Docket No. 35087, Notice of Availability of the Final Scope of Study for the Environmental Impact Statement, decided April 23, 2008, released April 28, 2008.

and cumulative effects within the Chicago metropolitan area (Study Area). Accordingly, SEA did not review potential indirect effects in Wisconsin associated with the Proposed Action.

5.3 Potential Indirect Effects of the Proposed Action

SEA reviewed the potential direct effects of the Proposed Action to determine if any could result in indirect effects: effects caused by the action that are later in time or farther removed in distance, but are still reasonably foreseeable. Based on its review of the potential effects on environmental impact categories identified in Chapter 4 of this EIS, SEA concluded that the Proposed Action could result in specific indirect effects from increased rail yard activity in the East Joliet and Kirk Yards and general indirect effects throughout the region.

5.3.1 General Indirect Effects

Many of the communities along the EJ&E rail line are proposing redevelopment projects. These projects are often sponsored by the local municipality with residential and commercial components undertaken by private investors and developers. If the residential component consists of a noise sensitive use such as an assisted living complex, some of these developments may not go forward with the expectation of increased freight traffic on the EJ&E rail line. If the commercial component consists of retail establishments that require substantial pedestrian traffic, the advent of increased freight train traffic may discourage commercial tenants. Many factors other than rail traffic influence development decisions, but the uncertainty associated with a change in the number of freight trains through a particular community on the EJ&E rail line could have adverse effects on some redevelopment proposals.

The communities along the CN lines that would experience reduced train traffic as a result of the Proposed Action would have less of the adverse effects attributable to freight railroad traffic. Many of these communities are already served by commuter rail. As a result of the Proposed Action, these communities may have increased incentive and opportunity for transit oriented development. This type of urban development could result in higher density residential development and associated commercial activities near the CN lines.

The changes in land use associated with transit-oriented development could influence the planning process which identifies and prioritizes the need for highway and transit improvements. These improvements could range from commuter rail and transit expansions, pedestrian safety improvements, streetscape enhancements, and other associated transportation projects. Increased freight traffic on the EJ&E rail line could cause local planning agencies to change plans for pedestrian trails or to plan additional pedestrian and vehicle safety projects.

The Proposed Action would include the relocation of a portion of CN's trains from the rail yards in the Chicago terminal area to the East Joliet and Kirk Yards. This could create additional capacity in a portion of the yards that CN currently uses which could accommodate increased activity from other rail carriers that operate in the area. This opportunity for increased rail activity could benefit the customers of the other rail carriers with better on-time performance and could help retain any employment that could be affected by CN's withdrawal from the yards in the Chicago terminal area.

The freight customers currently served by the EJ&E would have direct access to CN as a result of the Proposed Action. CN would be serving these customers with its own North American system and a rail system in the Chicago area which could be expected to function more smoothly than it does today. To the extent this new system provides improved service to these customers, there could be benefits to these customers from improved delivery to the end users of their products.

The additional rail freight capacity that the Proposed Action would provide to the Chicago and Northwest Indiana region could help the region maintain and even enhance its position in the worldwide freight system. With more reliable access to worldwide markets, the region could be better able to compete.

5.3.2 Increased Rail Yard Activities

One of the purposes of the Proposed Action is to give the Applicants access to EJ&E rail yards that would allow them to consolidate rail car classification activities (currently taking place at BRC Clearing Yard, IHB Gibson Yard, and CN Glen Yard) and to expedite train movements through Chicago. As part of its indirect effects analysis, SEA reviewed the potential environmental impacts of yard modification activities on railroad-owned property that could result from the Proposed Action.

Applicants identified two EJ&E rail yards that would experience yard activity increases exceeding the 100 percent threshold (set forth in the Board's environmental rules of 49 CFR 1105.7(e)) as a result of the Proposed Action: East Joliet Yard in Joliet and Kirk Yard in Gary (Applicants 07). Chapter 2, Section 2.2.3 discusses the nature and extent of those increased activities. The Applicants indicated that in order to achieve the increased work levels at these yards, CN and its Class I railroad partners would need to renegotiate existing Chicago-area interchange arrangements. They also proposed to construct new connections at Kirk Yard and in Joliet, near East Joliet Yard, to better utilize them. SEA described these connections in Section 2.2.2.1 of Chapter 2 and examined their potential direct environmental consequences in Chapter 4.

What is Classification?

Classification is the activity of sorting rail cars according to geographic destination and type. Most rail shippers do not generate train-load volumes, and their shipments of a given day usually move to numerous destinations. Railroads collect these cars with local trains and switch engines and deliver them to a classification yard, where the cars are sorted by destination into trains that depart for specific destinations. Similarly, yards receive trains from other yards and break them down into cars to be delivered to rail shippers in the area, and classify arriving trains into new trains destined for other yards that may be nearby or on the other side of the continent.

What is an Interchange Arrangement?

Freight cars move freely between all railroads in the North American rail system, enabling shippers located on one railroad to ship products to receivers located on any other railroad. The agreement by which railroads transfer freight cars between each other is called an *interchange arrangement*. These govern facets such as the specific tracks to be used for the interchange, times of day it will occur, and transfer of documents and payments for services.

5.3.2.1 Indirect Effects Associated with Proposed Activities at East Joliet Yard

The results of SEA evaluation of potential for indirect effects associated with the proposed activities as described in Chapter 2, Section 2.2.3 at East Joliet Yard. While there are direct effects of various types due to increased level of activity at the yard, as described in Chapter 4, SEA's review of the environmental impact categories that would potentially experience indirect effects related to the proposed rail yard activities determined there were no identifiable indirect effects

SEA concluded that Applicants' proposal to increase activities in East Joliet Yard is not likely to result in indirect effects.

5.3.2.2 Indirect Effects Associated with Proposed Activities at Kirk Yard

SEA examined potential indirect effects associated with activities related to the Proposed Action as described in Chapter 2, Section 2.2.3 at Kirk Yard. SEA reviewed the environmental impact categories that would potentially experience indirect effects related to the proposed rail yard activities. While the increased level of activity at Kirk Yard has various direct effects as described in Chapter 4, the only identifiable indirect effect SEA could determine was potential for increased employees to patronize businesses in the area.

Based on its analysis, SEA concluded that the Applicants proposal to increase activities at Kirk Yard could result in indirect effects, but the effects would be minimal.

5.3.3 Conclusions

SEA concluded that the Proposed Action could have generalized indirect effects on land use and transportation systems in the communities along both the EJ&E and the CN Lines. These indirect effects include potential changes in redevelopment patterns due to increases and reductions train traffic. In addition, SEA concluded that the Proposed Action could have indirect socioeconomic effects on the other rail carriers that serve the Chicago region and their customers by opening up capacity in the rail yards where CN would move operations to East Joliet and Kirk Yards, on the customers currently served by EJ&E who would gain access to the CN rail system, and on the northeast Illinois and northwest Indiana region by enhancing the region's competitive position in the worldwide marketplace.

The Proposed Action is not expected to have indirect effects resulting from increased activities at East Joliet Yard and only minimal indirect effects due to the increased activities at Kirk Yard.

5.4 Related Projects

In accordance with CEQ's definition of cumulative effects, related projects include "past, present and reasonably foreseeable future actions" within the Proposed Action's geographical boundaries (40 CFR 1508). Some of these related projects would occur in various places throughout the Study Area while others would be "site specific" and geographically located in particular areas within, near or adjacent to the EJ&E ROW.

5.4.1 Related Projects Carried Forward for Site-Specific Cumulative Effects Analysis

Related projects that SEA found appropriate for detailed site-specific cumulative effects analysis include the following:

- Planned expansion by Metra within EJ&E's right-of-way known as the Metra Suburban Transit Access Route (STAR) Line
- Planned construction of commuter stations by communities along the STAR Line
- Highway improvement projects that would cross the EJ&E rail line
- The Pratt's Wayne Woods Mining and Reclamation Project, which is under construction adjacent to the EJ&E rail line in DuPage County, Illinois.

- An airport runway extension project at Gary/Chicago International Airport in Indiana requiring relocation of a portion of the EJ&E rail line

These projects are briefly described below.

Metra STAR Line Expansion Plans

Metra is studying several rail lines for new or increased commuter service. The proposed STAR Line would use the EJ&E corridor from Hoffman Estates, Illinois to Joliet, Illinois (Metra 2007).³ This service would run in each direction every 30 minutes during peak and every 60 minutes during off-peak hours for a total of 52 one-way trips each weekday.⁴

Metra has also identified two additional EJ&E rail line segments for future expansion of STAR Line service. The STAR Line North segment would connect with the initial STAR Line service at Hoffman Estates and provide service north to Waukegan. The STAR Line East segment would connect with the initial STAR Line service at Joliet and provide service east to Lynwood, Illinois. SEA analyzed the cumulative effects related to the Metra STAR Line in Chapter 5, Section 5.4.1 and Table 5.4-1, above.

Proposed Metra STAR Line Commuter Stations

The communities of Hoffman Estates, Illinois, Bartlett, Illinois, Elgin, Illinois, West Chicago, Illinois, Warrenville, Illinois, Aurora, Illinois, Naperville, Illinois, Plainfield, Illinois, and Joliet, Illinois are planning to construct commuter stations adjacent to the STAR Line route and EJ&E rail line corridor. According to Metra's STAR Line Alternatives Analysis,⁵ the communities could build stations at the following nine locations:

- Hoffman Estates/ Prairie Stone next to I-90, Segment 14D - north of I-90 shared parking with the Sears Centre arena , platforms located in median of I-90 west of IL 59.
- Elgin/Bartlett at Spaulding Road, Segment 13A - north of the Milwaukee District West Line (MDW) and west of the EJ&E corridor. A new station on the MDW would be located south of the MDW and east of the EJ&E and the two stations would be connected by a pedestrian bridge. Bartlett submitted a resolution to SEA stating that it has been an active participant in the STAR Line since its introduction in 2003 and has provided funding to procure the proposed station location.⁶ Metra's Board approved a land swap with Bartlett for a layover yard, fueling, expanded station and parking improvements as necessary for Metra's current and proposed STAR Line services.⁷
- West Chicago at North Avenue, Segment 12 - north of IL 64 (North Avenue), east of Powis Road and west of the EJ&E
- West Chicago at Washington Street, Segment 11 - north of Washington Street and east of the EJ&E corridor

³ STAR Line Business Alliance Newsletter. Retrieved on February 14, 2008.

http://metraconnects.metrarail.com/enews/star/2007-10/STARLine_eNewsletters_1007.pdf. October 2007.

⁴ Metra STAR Line Alternatives Analysis; "Feasible Alternatives: Detailed Descriptions" at p. 1, dated November 13, 2007, received by SEA from Metra in a letter dated January 14, 2008.

⁵ Metra November 13, 2007. STAR Line Alternatives Analysis; Feasible Alternatives: Detailed Descriptions at p. 14 -16, dated November 13, 2007, received by SEA from Metra on January 14, 2008.

⁶ Village of Bartlett Resolution 2008-01-R, objection to the Proposed Action, dated January 15, 2008.

⁷ Metra Board meeting, December 14, 2007. Summary of meeting by SEA.

- Aurora/Warrenville at Butterfield Road, Segment 11 - south of Butterfield Road and east of the EJ&E
- Northwest Naperville, Segment 11 - south of North Aurora Road, east of the EJ&E and north of BNSF
- Naperville at 95th Street, Segment 10D - north of a proposed extension of 95th Street and east of the EJ&E corridor. The Southeast Community Area Plan, Naperville, Illinois envisions a grade separation between the extended 95th Street and the STAR Line/EJ&E corridor. The currently vacant land is planned to be redeveloped for the proposed Metra station, trails for recreation and transit access, and a commercial center.⁸
- Plainfield at Van Dyke Road, Segment 9A - south of 143rd Street, east of Van Dyke and west of the EJ&E. In its comments on the Scope, Plainfield stated that it spent \$7.5 million to acquire land for STAR Line station(s) but did not identify the location(s).⁹
- Plainfield/Joliet at Renwick Road, Segment 9B - terminal station with an island type platform between two tracks; south of Renwick Road and west of the EJ&E.

SEA's analysis of the cumulative effects related to the Metra STAR Line stations is set out in Section 5.5.2 and Table 5.5-1 and 5.5-2, below.

Highway Improvement Projects Across the EJ&E Rail Line

In 2008, IDOT plans to begin 3 road improvement projects on highway/rail at grade crossings on the EJ&E rail line. IDOT is also planning 11 additional projects starting from 2009 to 2013 that would involve highway/rail at grade crossings on the EJ&E line.¹⁰ In addition, the Indiana Department of Transportation (INDOT) plans improvements to Interstate 90, which would cross the EJ&E rail line at the southwest corner of Gary/Chicago International Airport (INDOT 2008) and a grade crossing improvement project at Lake Street in Griffith, Indiana.¹¹ SEA analyzed the cumulative effects related to the proposed highway crossings in Chapter 5, Section 5.5.3 and Table 5.5-3.

Pratt's Wayne Woods Mining and Reclamation Project

The Forest Preserve District of DuPage County, Illinois is planning to open a new fishing lake that will be surrounded by trails by the end of 2010. The lake is located immediately east of the EJ&E rail line tracks and south of Stearns Road near Bartlett, Illinois. The existing connection between the EJ&E rail line and the CN Freeport Subdivision lies in the northeast quadrant of the intersection of the two rail lines and will form the western boundary of the new lake site. The proposed new Munger connection is in this same area. The original proposal and three alternatives for the proposed Munger connection are described in Chapter 2, Section 2.4.1.4.

The lake is located in the Pratt's Wayne Woods Forest Preserve, a 3,800 acre site owned by the Forest Preserve District and located in the northwest corner of DuPage County. Pratt's Wayne Woods currently accommodates multiple uses ranging from camping, wetland restoration, wildlife protection, and equestrian paths. The lake property was originally mined for limestone products under a permit

⁸ Southwest Community Area Plan, Naperville, Illinois, dated May 28, 2002 at pages 22 & 35.

⁹ Village of Plainfield's Analysis of the Possible Impact of the Proposed Acquisition of the EJ&E by CN, signed by Village President, James A. Waldorf, undated, filed on February 14, 2008.

¹⁰ IDOT, 2008, FY 2008-2013 Proposed Highway Improvement Program, retrieved on February 28, 2008, <http://www.dot.state.il.us/hip0813/hwyimprov.html>.

¹¹ INDOT 2008. Indiana Road Restrictions (Search for Lake County), retrieved on February 28, 2008. <http://netservices.indot.in.gov/rwis/restrictions.aspx>.

issued by the Forest Preserve District in the late 1980s. There was extensive sand and gravel mining in the immediate vicinity of this site as well. The permit required reclamation of the site for public uses after the mining was completed. Some grading, extensive planting, fish stocking, and corrective work on the trails remain to be completed. A paved parking lot and the lake itself are in place. The Forest Preserve District is in the process of determining whether this project should serve as a trailhead.¹² SEA's analysis of the cumulative effects related to the Pratt's Wayne Woods reclamation project is set out in Section 5.5.4 and Table 5.5-4, below.

Airport Runway Extension

Gary/Chicago International Airport is planning to lengthen its runway by a total of 1,900 feet. This extension would require relocation of the elevated EJ&E rail line that is adjacent to the western boundary of the airport and is used to access Kirk Yard. Although FAA prepared an EIS and issued a ROD in support of the runway expansion, the Airport Authority and EJ&E have not reached agreement regarding relocation of the currently elevated EJ&E rail line. The Proposed Action does not include relocation of this track. However, the effects of the proposed runway extension combined with those of the Proposed Action are analyzed for cumulative effects in Section 5.4.7. For further information regarding the airport runway expansion and a figure showing the project, see Section 3.4.5.2, *Proposed Expansion at Gary/Chicago International Airport*, in Chapter 3, *Affected Environment*. SEA's analysis the cumulative effects related to the GCIA runway extension project can be found in Section 5.5.5 and Table 5.5-5.

5.4.2 Related Projects Carried Forward for System-Wide Cumulative Effects Analysis

Related projects warranting a system-wide (Study Area) cumulative effects analysis in this EIS include the following:

- The Chicago Region Environmental and Transportation Efficiency (CREATE) Program, a multi-modal (freight rail, passenger rail, and highway) transportation improvement program established through a public/private partnership (CREATE 2005)¹³
- Planned expansion by Metra (UP West, UP Northwest, Southeast) on rail lines that cross the right-of-way of the EJ&E rail line
- Planned expansion by NICTD within the CN's right-of-way and near the right-of-way of the EJ&E rail line
- Amtrak passenger service operations within the Study Area

These related projects are briefly described below.

CREATE Program

The congestion caused by the existing and forecasted demand for freight and passenger rail traffic in the Chicago area prompted the Association of American Railroads (AAR), on behalf of CN, BNSF, CPR, CSX, NS, UP and Metra and eventually AMTRAK; IDOT; and the Chicago Department of Transportation (CDOT) to sign a Joint Statement of Understanding to establish CREATE in 2003.

¹² Meeting between SEA, and John Oldenburg, Forest Preserve District of DuPage County, March 5, 2008.

¹³ CREATE. August 2005. Chicago Region Environmental and Transportation Efficiency Program, Final Feasibility Plan.

CREATE's purpose is to restructure, modernize, and separate where possible the operation of freight and passenger trains, and expand the freight and passenger rail facilities and the number of highway/rail grade separations (where a bridge separates a road from a rail line) in the Chicago metropolitan area (CREATE 2005).

The CREATE program proposed to develop five rail transportation corridors, all located entirely within Cook County, Illinois. There would be approximately 70 projects on these corridors as well as other improvements, such as grade separation projects, on existing rail lines outside of the corridors. The CREATE program designates 12 CN projects on the Central, Beltway, Western Avenue, and Passenger Express corridors (three projects for each corridor) (CREATE 2005). The East-West Corridor would cross CN's Chicago and Elsdon subdivisions and would include a project to improve rail traffic flow through the BRC Clearing Yard. Although CN indicated that it would not continue its participation in CREATE if the Proposed Action is approved, the remaining parties would likely continue their involvement. This related project is considered in SEA's analysis of system-wide cumulative effects presented in Section 5.6, below.

For further information regarding the CREATE program and a figure showing the CREATE corridors and projects, see Chapter 2, Section 2.5.2, *Proposed Action and Alternatives* and Chapter 4, Section 4.1.4.3 *Proposed Action, Proposed NICTD Service Affected by the Proposed Action*.

Metra Expanded Service that Would Cross the EJ&E Rail Line

Metra's proposed SouthEast Service Line would cross CN's Elsdon and Chicago subdivisions (Metra 2006) and the EJ&E rail line at Chicago Heights to serve Eastern Will County.¹⁴ Metra's proposed upgrade of the UP Northwest Line, which crosses the EJ&E rail line at Barrington, Illinois, would add three stations northwest of the EJ&E rail line and seven commuter trains to the UP Northwest Line (Metra 2007).¹⁵ Metra's proposed upgrade of the UP West Line, which crosses the EJ&E rail line at West Chicago, would add 13 new trains each weekday (Metra 2007).¹⁶ These related projects are considered in SEA's analysis of system-wide cumulative effects, discussed in Section 5.6, below.

For further information regarding the proposed Metra expansions as well as Figure 2.1-4 showing current Metra routes, see Chapter 2, Section 2.1.4, *Proposed Action and Alternatives, Passenger and Commuter Rail System*, and Chapter 4, Section 4.1.4.3, *Proposed Action, Proposed Metra Service on Affected EJ&E Rail Line Segments and Proposed Metra Service on Rail Lines That Cross Affected EJ&E Rail Line Segments*.

NICTD Expansion Plans

NICTD operates the South Shore commuter rail service on the CN's Illinois Central Chicago Subdivision trackage between 115th and Kensington, and Randolph Street in Chicago. The Proposed Action would reduce freight traffic on this CN segment. NICTD is presently constructing a switching improvement where its tracks connect to CN at 115th and Kensington that CN requested prior to announcing the Proposed Action.

¹⁴ Metra 2006. SouthEast Service Public Meeting Boards. Retrieved on February 28, 2008. http://metraconnects.metrarail.com/docs/SES_PresentationBoards.pdf.

¹⁵ Metra 2007. Union Pacific Northwest Line Upgrade Public Meeting PowerPoint Presentation. Retrieved on February 28, 2008. http://metraconnects.metrarail.com/pdf/UPNW_PowerPoint.pdf. July.

¹⁶ Metra 2007. Union Pacific West Line Upgrade Public Meeting PowerPoint Presentation. Retrieved on February 28, 2008. http://metraconnects.metrarail.com/pdf/UPW_PowerPoint.pdf. July.

NICTD is planning two new West Lake Corridor commuter services. One would operate between Chicago and Lowell, Indiana, and cross the EJ&E at Dyer, Indiana. The other would run between Chicago and Valparaiso, Indiana over the CN Grand Trunk Western Line (Elsdon and South Bend subdivisions) from Highland, Indiana to Valparaiso. This CN line is also projected to have fewer trains between Highland and Griffith and no change in service between Griffith and Valparaiso. NICTD intends its new service to be grade separated over the existing interlocking at Griffith, Indiana, where the EJ&E rail line intersects with the CN's South Bend Subdivision. However, to date NICTD and CN have not entered into an agreement that would allow NICTD to use CN's ROW for that line for its new service (NICTD 2006).¹⁷ As a result, SEA concluded that implementation of NICTD West Lake Corridor commuter service is not a reasonably foreseeable future action and therefore, could not be affected by the Proposed Action. However, the NICTD expansions are part of SEA's analysis of system-wide cumulative effects as described in Section 5.6, below.

For further information regarding the proposed NICTD expansion, see Chapter 3, Section 3.1.3.2, *Northern Indiana Commuter Transportation District (NICTD)* and Chapter 4, Section 4.1.4.3 *Proposed Action, Proposed NICTD Service Affected by the Proposed Action*.

Amtrak

Chicago's Union Station and its associated maintenance facilities south of Union Station function as the Midwestern Amtrak hub for its regional and long distance passenger trains. Amtrak provides passenger service in the Chicago region by operating on trackage rights owned by Class I railroads (BNSF, CN, and NS) and Metra (see Chapter 2, Figure 2.1-4, *Passenger and Commuter Rail System*). Amtrak operates in Illinois and Indiana on a number of railroad corridors that would be affected by the proposed Transaction, including most prominently, the St. Charles Air Line (the Air Line) in downtown Chicago. Amtrak operates six daily trains that use the Air Line to access Chicago's Union Station from CN's Chicago Subdivision. CN has agreed to keep the subdivision segments used by Amtrak in service until such time that an alternative Amtrak routing can be implemented (letter from CN to Amtrak dated March 10, 2008). Therefore, SEA concluded that the Proposed Action would not adversely affect existing Amtrak service that operates on the CN Chicago Subdivision. However, Amtrak's services are considered in the analysis of system-wide cumulative effects summarized in Section 5.6, below.

For further information regarding Amtrak's current and future operations in Chicago, see Chapter 3, Section 3.2.3, *Affected Environment, Amtrak* and Chapter 4, Section 4.1.4-2, *Existing Amtrak Service on Rail Line Segments Controlled by the Applicants*.

5.4.3 Projects Not Carried Forward for Cumulative Effects Analysis

SEA reviewed three other projects in the area and, as discussed in detail below, decided that these projects would not be carried forward for cumulative effects analysis because there would be no direct effects attributable to the Proposed Action on these projects. These projects include the following:

- Potential accelerator projects at Fermi National Accelerator Laboratory adjacent to the EJ&E rail line in DuPage County, Illinois

¹⁷ NICTD 2006. Definition of Alternatives Draft Report June 26, 2006. Report received by SEA at the EIS Scoping Meeting at NICTD on January 16, 2008.

- An EJ&E-owned swing bridge spanning the Illinois River on its Illinois River Line that the US Coast Guard is planning to replace to improve barge safety on the river
- Dunham Preserve and wetlands restoration project in DuPage County, Illinois

These projects are described below.

Fermi National Accelerator Laboratory

The Fermi National Accelerator Laboratory (Fermilab) was commissioned by the U.S. Atomic Energy Commission on November 21, 1967 to advance the understanding of the fundamental nature of matter and energy by conducting research at the frontiers of high energy physics and related disciplines. Fermilab's 6,800-acre site is in Batavia, south of West Chicago and west of Warrenville, west of and adjacent to the portion of EJ&E rail line that runs north/south through DuPage County, Illinois. The eastern border of the Fermilab campus shares a property line with the EJ&E line right-of-way. The rail line is approximately 1.3 miles from the east side of Fermilab's Tevatron and parallels the Fermilab eastern boundary from approximately MP 24.7 to MP 27.2 or for 2.5 miles (see Chapter 3, Figure 3.10-3, Fermilab Location in Relation to EJ&E Rail Line).

The circular Tevatron at Fermilab, which is the world's highest-energy particle accelerator, is four miles in circumference. The Tevatron has undergone extensive upgrades over the last several years in preparation for new research events.

Fermilab also has three future accelerator projects in different stages of planning: the International Linear Collider (ILC), a Muon collider (which has a 30-year planning window), and Project X (with a 3-5 year planning window). Researchers at accelerators around the globe are competing for the ILC. While no firm siting plans to the ILC exist at Fermilab, site suitability studies have evaluated geologic conditions on-site and determined that a north/south alignment would be best for ILC. The undeveloped portions of the eastern side of the Fermilab campus are potentially suitable for development of the ILC and other, future accelerator projects. Potential changes in train-induced, ground-borne vibration, particularly in a portion of the property where the ILC and other future accelerators could be built, could influence the ILC siting process in ways that could complicate Fermilab's chances of being awarded the ILC.

Some research equipment at Fermilab is highly vibration-sensitive. For example, the particle beams that are accelerated and collided with one another have a beam width of approximately 10 microns. Physicists at Fermilab use high-powered magnets to keep the particle beams focused. Sometimes vibration events occur with enough energy to disturb the focus of the beam, interfering with the collision.

The Department of Energy and Fermilab expressed concerns to SEA about the Proposed Action's increased number of trains, possible changes in train consists, the types of railcars that would be used, and how their suspension systems could affect ground-borne vibration at Fermilab. Commenters are also concerned about the potential impacts of a second rail line that could be constructed within the EJ&E rail line right-of-way in the future.¹⁸

As a result of these comments, SEA analyzed vibration impacts using criteria specifically designed to address Fermilab's concerns (see Chapter 4, Section 4.10.8). SEA concluded that vibrations associated with the proposed additional CN trains on the EJ&E rail line in the vicinity of Fermilab would not

¹⁸ Meeting between Tim Casey, SEA, and Kurt Riesselmann, Public Affairs, and Jim Volt, Technical Contact for Fermilab, February 21, 2008.

affect Fermilab or its current and proposed project work. Therefore, SEA concluded that additional vibration related to the Proposed Action and the work undertaken at Fermilab would not interact to result in cumulative effects.

Illinois River EJ&E Movable Bridge

The Illinois River is an important waterway that serves many shippers in the Chicago area and the Midwestern United States. The EJ&E's Illinois River Branch that runs from Walker to Goose Lake, Illinois crosses the river on a 103-year old "swing bridge." According to the Illinois River Carriers' Association, the bridge spans the river below the Dresden Island Lock and Dam, which, at certain times of the year, can create excessive flows with swift currents.

More than 18,000 barges pass under this bridge annually, which equates to almost 50 barges everyday. Barge tows on the Illinois River can be up to 108 feet wide and between 600 and 1,000 feet long. The narrow 113 foot span results in this bridge being hit by barges more frequently than any other bridge in the country. The bridge is so narrow that in order to pass through the draw, barge flotillas must make a controlled landing on the piers to get through. This maneuver requires a careful approach and is, therefore, time consuming.

The U.S. Coast Guard's Bridge Branch has completed the design and engineering work for a new bridge with a span of 300 feet. This bridge replacement project has received funding from Congress since FY 2000. Therefore, it is a reasonably foreseeable related action that has been approved and funded. However, the Illinois River Branch will not incur any additional traffic as a result of the Proposed Action. Consequently, SEA determined that the EJ&E bridge replacement would not result in cumulative effects and need not be further addressed in the EIS.

Dunham Forest Preserve

The Forest Preserve District of DuPage County, Illinois acquired the 379 acre Dunham Forest Preserve in 2006. The Forest Preserve District plans to restore the Dunham Preserve to provide 1) recreational and educational opportunities for the public and 2) habitat for grassland birds, waterfowl, mammals, amphibians and reptiles. Currently the preserve is 86 percent agricultural land. Approximately 40 percent of its land surrounding Norton Creek is classified as floodplain or wetland (Forest Preserve District of DuPage County 2008). One of the Munger Connection alternatives (the UP Connection) could affect the Dunham Preserve and its wetlands because it would require that the Applicants obtain a parcel of the Dunham Preserve. However, this alternative is unlikely to be selected for construction because it would involve using a segment of UP, would require two connections, and would not have adequate spacing between highway/rail crossings to avoid vehicle delay. Therefore, SEA determined that there was no need to analyze the potential for cumulative effects further.

5.5 Site-Specific Cumulative Effects Analysis of Related Projects

To identify possible cumulative effects to environmental impact categories, SEA examined the potential effects of each localized (versus system-wide) related project to determine if its expected effects would combine with potential effects from the Proposed Action. SEA then analyzed the affected related projects in conjunction with environmental impact categories described and analyzed in Chapters 3 and 4) within their appropriate temporal and spatial boundaries. SEA then determined

whether those related projects, in conjunction with the Proposed Action could result in cumulative effects to environmental impact categories.

5.5.1 Metra Expansion: The STAR Line

Metra's proposed STAR Line would provide commuter service between Hoffman Estates and Joliet, Illinois using the EJ&E rail line or a new, dedicated track that would be built in the EJ&E line right-of-way. Although Metra and EJ&E have not entered into a binding agreement to cover this planned commuter service, the parties have participated in discussions. Moreover, CN has communicated with Metra about accommodating the STAR Line if the Board approves the Proposed Action¹⁹ and several towns along the route have identified and acquired station grounds.²⁰ Thus, Metra's STAR Line service is a reasonably foreseeable future action within the temporal and spatial boundaries of the Proposed Action.

SEA identified the Environmental Impact Categories that would be affected by the Proposed Action and could interrelate with environmental impacts associated with the Metra STAR Line to determine whether they would result in cumulative effects. Table 5.5-1 on the next page, contains SEA's analysis of potential cumulative effects and follows here.

Table 5.5-1. Potential Cumulative Effects Analysis of the Proposed Metra Star Line	
EIC^a Affected By The Proposed Action	Cumulative Effects
Highway/Rail At-Grade Crossing Safety	Due to projected increases in the number of freight trains and additional commuter trains, vehicle-train collisions could increase at highway/rail at-grade crossings on EJ&E rail line segment Nos. 9B - 13A, which would be shared with STAR Line trains. However, SEA's analysis of accident impacts related to the Proposed Action suggest that none of the crossings should be substantially impacted by the additional trains because of existing and proposed grade crossing warning devices. ^b
Rail/Rail At-Grade Crossing Safety	Due to projected increases in the number of freight trains and additional commuter trains, train accidents or collisions could increase at two rail/rail at-grade crossings on EJ&E rail line segments that would be shared with STAR Line trains. The two crossings are: at Spaulding with CP/ICE/Metra and at West Chicago with UP/ Metra. ^c However, the railroads involved operate the crossings using signals and controls that minimize the potential for such accidents.
Vehicle Delays at Highway/Rail At-Grade Crossings	Due to projected increases in the number of freight trains and the addition of commuter trains, vehicle delays could increase at highway/rail at-grade crossings on EJ&E rail line segment Nos. 9B - 13A.
Public Lands- Forest & Nature Preserves	Pratt's Wayne Woods Forest Preserve is bisected by EJ&E rail line segment No. 12, which would be used by the STAR Line, and is also the location of three of the proposed Munger connection alternatives. Therefore, mitigation may be needed to address potential construction impacts. ^d Additional trains could also result in cumulative "proximity" effects, including increased noise and delays at pedestrian/rail at-grade crossings within the preserve. Finally, were Metra to construct a dedicated track within the EJ&E ROW, the construction activities could cause impacts to these and other public lands adjacent to the corridor.
Public Lands - Trails and Greenways	SEA evaluated existing and proposed trails, greenways, or scenic corridors for potential effects from construction of proposed connections and double track. To ensure that access to trails and greenways would be maintained during such construction, SEA proposed mitigation measures. ^e The effects of constructing a dedicated track for STAR Line trains on the EJ&E ROW could combine with the effects of the proposed construction projects to result in cumulative effects.

¹⁹ Metra correspondence, March 17, 2008 regarding discussions with CN to accommodate the Star Line.

²⁰ Metra, November 13, 2007. STAR Line Alternatives Analysis; Feasible Alternatives: Detailed Descriptions at p. 14 - 16, dated November 13, 2007, received by HDR from Metra on January 14, 2008.

Table 5.5-1. Potential Cumulative Effects Analysis of the Proposed Metra Star Line	
EIC^a Affected By The Proposed Action	Cumulative Effects
Emergency Response	Due to the projected increase in number of freight trains and the addition of commuter trains, emergency vehicle delays could increase at highway/rail at-grade crossings on EJ&E rail line segment Nos. 9B - 13A.
Air Emissions from Fuel Use & Vehicle Delays	Although there would be an increase in emissions from fuel used by Metra, the STAR Line users could have reduced use of their vehicles with related reductions in fuel emissions, which could offset the potential increases.
Noise and Vibration	Due to the projected increase in number of freight trains and additional commuter trains, noise and vibration would likely increase on EJ&E rail line segment Nos. 9B - 13A.
Biological Resources	SEA expects effects on biological resources from the Proposed Action to be minor. The combination of projected increased number of freight trains and STAR Line commuter trains, with related Operations and Maintenance could impact natural areas, state-listed Threatened and Endangered species and other biological resources adjacent to the EJ&E line right-of-way, particularly if Metra were to construct a dedicated track within the EJ&E line right-of-way that could disturb habitat and wildlife. Lake Renwick Heron Rookery Nature Preserve in Will County is adjacent to EJE Segment 9B and is believed to be the largest such rookery in Illinois. Within 500 feet of the rail line, increased noise could affect animal behavior and mask wildlife communication signals. ^f Increased noise disturbances and wildlife-train collisions could occur with the addition of a Metra track and trains on the EJ&E line right-of-way.
Water Resources	Potential impacts on wetlands and other water resources adjacent to the EJ&E could arise if Metra were to construct a dedicated track for the STAR Line within the EJ&E ROW. However, such construction activities would be subject to local, state, and federal regulation related to water resources and wetlands, including sections 401 and 404 of the Clean Water Act. ^g
Related Project Components	
<ol style="list-style-type: none"> 1. STAR line would provide commuter service of 52 trains each weekday between Hoffman Estates and Joliet using the EJ&E West Division rail line and/or ROW corridor. 2. EJ&E rail line segment Nos. 9B - 13A, which would serve STAR Line's commuter trains, would also carry an average of 17 to 21 additional freight trains per day. 3. The number of trains using these EJ&E segments (whether the EJ&E rail line or that line with a dedicated Metra line within the right-of-way) would grow from as few as 4 trains per day (EJE-13B) to as many as 83.6 trains (EJE-11) between Hoffman Estates and Joliet. 4. Metra is expected to review such impacts in its environmental study of the STAR Line. 	

Notes:^a EIC refers to Environmental Impacts Category^b See Chapter 3, Section 3.2.4.1 and Appendix D^c See Chapter 6 for specific proposed mitigation.^d See Chapter 4, Section 4.5.4.7^e See Chapter 6, Section 6.3.14^f See Chapter 4, Section 4.11, including Table 4.11-1, Section 4.11.5.2, Table 4.11-3 and Section 4.11.6^g See Chapter 4, Section 4.12.1

As discussed in the above table, SEA examined these environmental impact categories in conjunction with the proposed Metra STAR Line and determined that interaction between Proposed Action impacts and the proposed STAR Line could result in minor cumulative effects.

5.5.2 Proposed Metra STAR Line Commuter Stations

The communities of Hoffman Estates, Elgin, Bartlett, West Chicago, Naperville, and Plainfield/Joliet are planning to construct commuter stations adjacent to the STAR Line route and EJ&E rail line corridor. SEA identified the proposed locations of the nine stations currently planned along the EJ&E rail line to examine their potential impacts on the environmental impact categories studied in the EIS

in conjunction with the Proposed Action. SEA visited the proposed station sites and did not identify any apparent biological resources (wetlands, streams) or public land use impacts.²¹ The sites appeared to be undeveloped, urban lots for the most part, and surrounded by the population centers that they would serve.

SEA identified the environmental impact categories that would be affected by the Proposed Action and could interrelate with environmental impacts associated with the Metra STAR Line stations to determine whether they would result in cumulative effects. Table 5.5-2 on the next page, summarizes the results of SEA's analysis of possible cumulative effects.

²¹ Visits to sites by representatives of SEA on March 26, 2008.

Table 5.5-2. Potential Cumulative Effects Analysis of the Proposed Star Line Commuter Stations	
EIC^a Affected By Proposed Action	Cumulative Effects
Highway/Rail At-Grade Crossing Safety	New STAR Line stations would result in additional vehicle traffic nearby during weekday peak hours. Renwick Road, which would serve a proposed station location in Plainfield/Joliet and crosses the EJ&E rail line, could exceed the high accident frequency threshold under the Proposed Action. However, SEA's analysis of accident impacts related to the Proposed Action suggest that most of the crossings should not be substantially impacted by the Metra stations because of existing and future grade crossing warning devices. ^b
Vehicle Delays at Highway/Rail At-Grade Crossings	Due to projected increase in the number of freight trains and additional commuter trains, vehicle delays at highway/rail at-grade crossings near Metra stations adjacent to the EJ&E rail line would likely increase without some road improvements. The Elgin Comprehensive Plan suggests that Spaulding Road may be upgraded to serve the station. In DuPage County, the percent change in total vehicle traffic delays would be highest at Washington Street (6.9 percent), which would serve a proposed station location in West Chicago. ^c The potential Metra Station coupled with the Proposed Action could exacerbate vehicle delay cumulative effects.
Land Use	Land uses in the areas around the proposed station locations include residential and commercial development. The effects related to the Proposed Action and the proposed station locations could increase development. For example, Naperville plans a grade separation between an extended 95 th Street and the STAR Line/EJ&E corridor with currently vacant land to be used for the proposed station, trails for recreation and transit access, and a commercial center. Any cumulative effects associated with the conversion of land from one use to another would not likely conflict with local zoning laws and accepted land use characteristics and thus are not deemed to be significant. ^d
Energy - Change In Fuel Use	Although there would be an increase in fuel used by Metra, the STAR Line users could have reduced use of their vehicles by parking and using the STAR Line stations and trains, which would offset increased consumption and conservation of fossil fuels.
Air Emissions from Fuel Use & Vehicle Delays	Although there would be an increase in emissions from fuel used by Metra, the STAR Line users likely would have less need to use their vehicles, which would offset such an increase.
Socioeconomics	Due to increased traffic near station locations, there could be cumulative effects impacts associated with related development. However, the extent and nature of potential development around rail stations would likely fit within community planning efforts and result in beneficial socioeconomic effects, including additional jobs and consumer-related businesses.
Related Project Components	
<ol style="list-style-type: none"> 1. STAR Line would provide commuter service between Hoffman Estates and Joliet through stations at nine locations adjacent to the EJ&E line right-of-way; 2. The communities of Hoffman Estates, Elgin, Bartlett, West Chicago, Naperville, and Plainfield/ Joliet are planning to construct commuter stations; some communities have acquired proposed station sites; and 3. Metra or host communities are expected to review environmental impacts when proposed location of the station has been finalized. 	

Notes:

^a EIC refers to Environmental Impacts Categories^b See Chapter 4, Section 4.2.2.3 and Tables 4.2-13 and 4.2-16^c See Chapter 4, Tables 4.4.4-5 (Western Cook County), 4.4.4-6 (DuPage County) and 4.4.4-7 (Will County) and the associated discussions for Proposed Action-related delays at roads that would access STAR Line stations.^d "Southwest Community Area Plan, Naperville, Illinois," dated May 28, 2002 at pages 22 & 35.

5.5.3 Highway Construction Projects

SEA identified the environmental impact categories that would be affected by the Proposed Action and could interrelate with environmental impacts that would be associated with planned highway construction projects to determine whether they would result in cumulative effects. Table 5.5-3 below, summarizes SEA's analysis of possible cumulative effects.

Table 5.5-3. Cumulative Effects Analysis of the Proposed Highway Construction Projects		
Location (EJ&E Rail Line Segment No.)	Highway Project	Cumulative Effects
Mundelein (14)	Ill. 83; Resurfacing	None; roadway geometry and RR crossing will not change.
Barrington (14)	Ill. 59; Resurfacing	None; roadway geometry and RR crossing will not change.
Barrington (14)	West Main Street; Resurfacing	None; roadway geometry and RR crossing will not change.
Elgin (14)	Ill. 58; Resurfacing	None; roadway geometry and will not change, and RR crossing is already grade separated.
West Chicago - IL 64 (12)	Ill. 64; Add Lanes, RR bridge replacement	Some additional noise due to additional lanes but noise will be mitigated as a part of the highway project if warranted. No safety or vehicle delay effects since the EJ&E rail line and highway are already grade separated.
West Chicago (11)	Ill. 38; Resurfacing	None; EJ&E line and highway are already grade separated.
Plainfield (9)	US 30; Resurfacing	None; roadway geometry and RR crossing will not change.
Plainfield (9)	Ill. 126; Resurfacing	None; roadway geometry and RR crossing will not change.
Joliet ^b (9)	I-55; Add lanes, Resurfacing	Some additional noise due to additional lanes, but noise will be mitigated as a part of the highway project, if warranted. No safety or vehicle delay because it is already grade separated.
Joliet (7)	I-80; Resurfacing	None; EJ&E and highway are already grade separated, and roadway geometry would not change.
Richton Park (7)	I-57; Resurfacing	None; EJ&E and highway are already grade separated, and roadway geometry would not change.
Matteson (7)	Governors Hwy; Resurfacing	None; EJ&E and highway are already grade separated, and roadway geometry would not change.
Park Forest (6)	Western Avenue; widening and resurfacing, RR crossing improvement, and bikeway	No additional safety or vehicle delay expected since crossing would remain at grade. There could be additional safety effects due to increased bicycle use.
Sauk Village (5)	Ill. 394; Resurfacing, RR bridge repair	None; it is already grade separated.
Griffith ^c (4)	Lake Street; Rail crossing improvement	Some benefit to highway-rail grade crossing safety.
Gary ^d (2)	I-90; Reconstruction with additional travel lanes	Some additional noise due to additional travel lanes but noise will be mitigated as part of the highway project, if warranted. No additional safety or vehicle delay effects expected because the EJ&E rail line and highway are already grade separated.

Table 5.5-3. Cumulative Effects Analysis of the Proposed Highway Construction Projects

Location (EJ&E Rail Line Segment No.)	Highway Project	Cumulative Effects
Related Project Components		
1. IDOT is planning 14 projects that would cross the EJ&E rail line with the start dates of these projects ranging from 2008 to 2013.		
2. INDOT plans improvements to Interstate 90, which would cross the EJ&E rail line at the southwest corner of Gary/Chicago International Airport.		
3. IDOT and INDOT have or will review environmental impacts to varying degrees in their environmental studies for these highway construction projects.		

Notes:

- ^a See Illinois Tollway: Traffic and Construction: Projects by Roadway: Tri-State Tollway (I-94/294), retrieved on May 30, 2008.
- ^b IDOT, 2008, FY 2008-2013 Proposed Highway Improvement Program, retrieved on February 28, 2008, and May 28, 2008, <http://www.dot.state.il.us/hip0813/hwyimprov.html>.
- ^c Northwest Indiana FFY 2008-2011 Transportation Improvement Program Full Project Listing through Amendment #8 (March 2008) provided by Gary Evers, Northwestern Indiana Regional Planning Commission, May 27, 2008.
- ^d Indiana Toll Road Information, retrieved on May 22, 2008, at <http://www.getizoom.com/roadinfo/lake.jsp>.

Based on its review of these highway construction projects, SEA determined that none of them would interrelate with the Proposed Action to cause measurable cumulative effects.

5.5.4 Pratt's Wayne Woods Forest Preserve and Mining and Reclamation Project

SEA identified the environmental impact categories that would be affected by the Proposed Action and could interrelate with environmental impacts associated with the Pratt's Wayne Woods Forest Preserve and the Mining and Reclamation Project within the forest preserve to determine whether they would result in cumulative effects. Table 5.5-4 on the next page, contains a summary of SEA's analysis of possible cumulative effects.

Table 5.5-4. Potential Cumulative Effects Analysis of the Proposed Pratt's Wayne Woods Mining And Reclamation Project

EIC ^a Affected By Proposed Action	Cumulative Effects
Land Use	SEA identified 4 alternative alignments for the proposed Munger connection adjacent to the forest preserve. While 1 of them would stay within the EJ&E line and ComEd right-of-way, a portion of the forest preserve would be needed to build the original alternative or the northwest quadrant alternative. SEA proposed land use mitigation measures for construction of the Munger connection. ^b If they are implemented, cumulative effects should not occur.
Air Quality/ Emissions	The forest preserve and lake project could be temporarily impacted by fugitive particulates and exhaust emissions resulting from construction of the Munger connection. ^c However, the forest preserve and lake would not add to such air emissions and would not cause cumulative effects.
Noise and Vibrations	Due to increased number of freight trains, noise and vibration would increase at the adjacent forest preserve. These effects could impact wildlife and recreational users. In addition, noise and vibration would temporarily increase during construction of the Munger connection. ^d However, the forest preserve and lake would not add to such noise/vibration and therefore, would not result in cumulative effects.
Biological Resources	Due to the increased number of freight trains, noise/vibration impacts and species/train collisions could increase at the adjacent forest preserve, and wildlife and nesting birds could be disturbed. The construction of the Munger connection would have direct effects on Brewster Creek, Powis Marsh, Powis Woods, Stearns Marsh West, Camp Prairie, and Shop Meadow within the forest preserve. ^e However, the forest preserve and lake would not add to such biological resource impacts and, therefore, would not cause cumulative effects.
Water Resources	Depending on the alternative, construction of the Munger connection could impact drainage areas nearby and could require various conditional permits. ^f However, the forest preserve and lake would not add to water resource impacts and therefore, would not cause cumulative effects.
Related Project Components	
<ol style="list-style-type: none"> 1. The 3,800 acre Pratt's Wayne Woods Forest Preserve in DuPage County is bisected by Segment 12 of the EJ&E rail line and the CN Freeport Subdivision. The forest preserve has multiple uses ranging from camping, wetland restoration, wildlife protection, and equestrian paths. Any of the four proposed Munger connections would occupy land adjacent to the forest preserve while two of the alternatives would require acquisition of forest preserve land. (See Chapter 2, Sections 2.2.2.1 and 2.4.1). 2. The Pratt's Wayne Woods Mining and Reclamation Project consists of a fishing lake created from a gravel pit on forest preserve property in the northeast quadrant of the existing crossing and connection between the EJ&E and the CN rail lines. Trails are planned around the lake. The lake lies in the northeast quadrant of the intersection of the two rail lines and forms the western boundary of the new lake site. All of the Munger connection alternatives would be constructed near the lake (see Section 5.3.1, above). 3. The forest preserve and mining and reclamation lake host wetlands, wildlife habitat and State Threatened and Endangered species. 	

Notes:

^a EIC refers to Environmental Impact Category.^b See Chapter 4, Section 4.5.4.7 and Section 4.5.4.10.^c See Chapter 4, Section 4.9.1.1.^d See Chapter 4, Section 4.10 for analysis of noise and vibration on receptors in Segment 12.^e See Chapter 4, Section 4.11.5.3: "Pratt's Wayne Woods Forest Preserve and IANI 1401."^f See Chapter 4, Section 4.12.4.1 and related Tables.

SEA concluded that construction of the proposed Munger Connection within the EJ&E ROW, when combined with effects of the forest preserve and fishing lake, would not interrelate to result in cumulative effects.

5.5.5 Airport Runway Extension

SEA identified the environmental impact categories that would be affected by the Proposed Action and could interrelate with environmental impacts associated with Gary/Chicago International Airport's plan to lengthen its runway and relocate the EJ&E rail line leading into the west end of Kirk Yard. SEA also reviewed the environmental documents associated with the runway extension, including the Final EIS and the Record of Decision prepared by Federal Airline Administration, to determine whether the combined effects of the two projects would result in cumulative effects. Table 5.5-5 below, contains a summary of SEA's analysis of possible cumulative effects.

Table 5.5-5. Potential Cumulative Effects Analysis of the GARY/Chicago International Airport Runway Extension	
EIC^a Affected By Proposed Action	Cumulative Effects
Railroad Operations	If the EJ&E rail line into Kirk Yard were rerouted and an interim highway/rail at-grade crossing installed at Industrial Highway, Applicants' proposed rail operations would be affected. Currently, EJ&E "stages" trains on this line as they enter Kirk Yard. If the yard is full, trains are held on one of the two mainlines between the interlocking at the west end of Kirk Yard and West 5 th Avenue. Currently, EJ&E can hold only one train up to 8,000 ft long, with the other mainline used to move trains in and out of Kirk Yard. The likelihood that one or more trains would need to be held between West 5 th Avenue and the Kirk Yard interlocking could increase under the Proposed Action. Assuming a new highway/rail at-grade crossing was installed at Industrial Highway, the Applicants would be unable to stage the same number and length trains outside Kirk Yard which would impact the yard's capacity and function, resulting in cumulative effects associated with rail operations. ^b
Highway/Rail At-Grade Crossing Safety	If the EJ&E rail line into Kirk Yard were rerouted and an interim highway/rail at-grade crossing installed at Industrial Highway, the crossing would be affected by the Applicants' proposed rail operations. With the projected increased number of trains using Kirk Yard, train-vehicle collisions at Industrial Highway would be possible. However, crossing warning devices should be installed for public safety protection. ^c
Vehicle Delays Highway/Rail At-Grade Crossings	The effects of Gary/Chicago International Airport's runway extension and reroute of the EJ&E line would combine with projected increased number of trains using Kirk Yard under the Proposed Action to create vehicle delays at the at grade crossing of Industrial Highway. The total time the grade crossing would be blocked by trains in 2015 under the Proposed Action scenario is estimated to increase from 16.3 to almost 70 minutes per day. ^d
Emergency Response	If Industrial Highway is converted to an interim at-grade crossing to facilitate Gary/Chicago International Airport's runway extension, effects related to the Proposed Action could delay emergency vehicles. However, SEA believes such vehicles would use the nearest grade separated crossing to get to the other side of the right-of-way if a train blocked the Industrial Highway at-grade crossing.
Noise and Vibration	Due to the proposed increased number of trains and additional yard activities, noise levels would increase within Kirk Yard. However, there would not be noise or vibration impacts because there are no sensitive receptors inside the noise or vibration contours, i.e., the yard is not located in sufficient proximity to noise- or vibration-sensitive receptors. The Gary/Chicago International Airport EIS studied noise impacts associated with the runway extension and reached a similar conclusion with regard to the area northwest of the runway site (where the EJ&E rail line is adjacent to the airport). ^e
Energy and Fuel Use	If the Gary/Chicago International Airport constructed the proposed runway extension and Industrial Highway became an interim at-grade crossing with increased vehicle delays, vehicle fuel use would increase.

Table 5.5-5. Potential Cumulative Effects Analysis of the GARY/Chicago International Airport Runway Extension

EIC ^a Affected By Proposed Action	Cumulative Effects
Water Resources	<p>If Gary/Chicago International Airport constructed the proposed runway extension and the EJ&E was rerouted, wetlands along the new rail route would be impacted. In addition, most of the Asphalt Wetlands would be permanently lost as a result of the proposed runway extension.</p> <p>However, SEA concluded that the runway-related impacts would not combine with effects associated with the Proposed Action to cause cumulative effects.</p>
Related Project Components	
<ol style="list-style-type: none"> 1. The proposed 1,900 ft. Gary/Chicago International Airport runway extension would require that the EJ&E rail line into Kirk Yard be modified so that Industrial Highway would change from a grade separation to an interim at-grade crossing. To ensure the new crossing would not be blocked for long periods by trains awaiting entry to the yard, their length and number could be further restricted. 2. The area surrounding Kirk Yard is industrialized; there is currently a highway-rail crossing at 5th Avenue, which allows only one 8,000 ft. long train to occupy the EJ&E rail line adjacent to Kirk Yard to await entry into the yard. However, the occupying train can await entry for as long as is necessary. 3. CN would add 1,355 daily car handlings to EJ&E's 685 cars for a total of 2,039 switched cars per day at Kirk Yard under the Proposed Action. It plans to arrive and depart 35.3 trains each day with an average length of 5,437 ft. To handle the additional cars and trains, CN would "upgrade and expand" Kirk Yard; however CN has not determined what it would add or change and where those changes would be made within the yard area. 	

Notes:

^a EIC refers to Environmental Impact Category.^b See Chapter 4, Section 4.1.5.1.^c Industrial Highway is currently grade separated. See Chapter 4, Section 4.4.8.^d See Chapter 4, Table 4.4.8-1.^e See Chapter 4, Section 4.10.4.5 and Gary/Chicago International Airport - Record of Decision, March 2005, p 6-22.^f See Chapter 4, Section 4.8.3.3.

SEA concluded that the interrelationship between the Applicants' proposal to increase activities at Kirk Yard and Gary/Chicago International Airport's planned runway extension and rerouting of the rail line into the yard could result in cumulative effects related to the Industrial Highway. That crossing's change from a grade separation to an interim at-grade crossing would affect crossing safety and vehicle delays. Gary/Chicago International Airport and the Applicants could continue to negotiate to develop a mutually agreeable resolution responsive to the Airport's needs which could also address the potential cumulative effects. Recommended mitigation is contained in Chapter 6.

5.5.6 Conclusions

SEA concluded that there are no site specific cumulative effects from the Proposed Action and the existing and potential future accelerator projects at Fermi National Accelerator Laboratory, the Illinois River EJ&E Movable Bridge replacement, the Dunham Forest Preserve wetland restoration project, and the Pratt's Wayne Woods Mining and Reclamation Project. SEA concluded that there may be site specific cumulative effects from the Proposed Action and a portion of the highway construction projects that cross the EJ&E, but that these effects cannot be measured. SEA concluded that there will be site specific cumulative effects from the Proposed Action and the Metra STAR Line, the Metra STAR Line commuter stations, and the runway extension at Gary/Chicago International Airport.

5.6 System-Wide Cumulative Effects Analysis

As indicated in the Final Scope, SEA determined that it would focus only on the Study Area for “system-wide” cumulative effects related to the Proposed Action. This Draft EIS explains that cumulative effects that could affect the entire Study Area were most likely to occur in two environmental impact categories: energy and air quality/climate (see Sections 4.8 and 4.9). SEA gathered information about past, present, and proposed related projects that would not necessarily be located along the EJ&E rail line but would be in the Study Area and could result in regional or system-wide cumulative effects, to consider their potential effects on energy and air quality/climate. Those regional related projects, which are described in Section 5.3.2, include:

- The CREATE Program
- Proposed expansion of existing Metra commuter line services
- Proposed new commuter line services that do not yet have firm schedules and configurations and/or would only cross the EJ&E rail line
- Amtrak services within the Study Area

5.6.1 Energy (Fuel) Use

To evaluate the potential cumulative effects on energy use, SEA determined the effects of the Proposed Action on energy use and energy efficiency (see Chapter 4, Section 4.8.3.1). To do so, SEA first calculated the difference in energy use caused by operations of moving CN trains (see Table 4.8-1b), by moving and idling of all of the rail carriers that operate on (EJ&E and CN rail lines) (see Chapter 4, Table 4.8-2b) and by idling reductions for CN trains (see Chapter 4, Table 4.8-3b). SEA found that implementation of the Proposed Action would result in a net increase in energy (diesel fuel) use caused by the longer EJ&E route that would be taken by CN trains. However, SEA noted that energy efficiency would improve under the Proposed Action (see Chapter 4, Section 4.8.3.2). This outcome would result from the efficiencies of operating longer trains, with fewer speed changes and less idling. For example, CN trains would avoid the engine idling and delays currently caused by the need to use the congested BRC Clearing Yard.

SEA also analyzed energy (gasoline) used by idling vehicles stopped at highway/rail grade crossings under both the No-Action and Proposed Action scenarios. It concluded that vehicles would use more energy under the Proposed Action because of greater idling time at crossings blocked by longer trains (see Chapter 4, Section 4.8.3.3). Finally, SEA totaled the energy use changes that would occur if the Proposed Action were approved and concluded that there would be a relatively small net increase in energy use in the year 2015 (see Chapter 4, Section 4.8.5 and Table 4.8-6b).

SEA did not perform detailed calculations of energy use for the regional related projects because the available planning documents did not analyze energy use and proposed train numbers, configurations, schedules, and equipment were either tentative or not available. Based on a review of the available information on the related projects, however, it appears to SEA that each project is intended to increase overall energy efficiency. For these reasons, SEA concluded that there was no need to assess cumulative effects on energy use.

5.6.2 Air Quality and Climate

The air quality/climate Study Area includes Lake, Cook, DuPage, Will, McHenry, Kane, Kendall, and Grundy counties in Illinois and Lake and Porter counties in Indiana. All ten counties are, in whole or in part, classified “moderate” non-attainment for the annual PM_{2.5} and 8-hour ozone standards under the NAAQS. Ozone is created, in part, by photochemical reactions involving NO_x and VOC emissions (see Chapter 3, Section 3.9.1, *Existing Air Quality Conditions*). SEA examined this ten-county area for cumulative effects because emission changes associated with the Proposed Action in conjunction with the regional related projects could potentially affect air quality within the Study Area.

SEA’s analysis showed that air emission effects for non-attainment pollutants (PM_{2.5} and ozone) would originate from several sources under the Proposed Action:

- Construction related emissions, including fugitive emissions caused by off-road equipment and a switch locomotive used for a material train during construction of the connections and double track extensions (see Chapter 4, Section 4.9.1.2)
- Emissions related to active and idling operations of CN trains and foreign carriers on CN and EJ&E rail lines resulting from the Proposed Action (see Chapter 4, Section 4.9.3)
- Emissions caused by vehicle idling at highway/rail at-grade crossings affected by the Proposed Action (see Chapter 4, Section 4.9.3)

Based on expected emission levels from these activities, together with potential for adverse impact on air quality, SEA concluded that NO_x, as an ozone precursor, would be the pollutant of greatest concern with respect to the Proposed Action. General Conformity *de minimis* emissions thresholds were used as reference thresholds for determining importance of emissions levels, SEA used the emissions thresholds (100 tons/year for all affected pollutants) as a measure to determine whether further analysis or other action should be considered. When it accounted for all emissions effects related to the Proposed Action, SEA concluded that the changes in NO_x emissions would be below General Conformity *de minimis* emission thresholds by 2015 (see Chapter 4, Table 4.9-8b).

SEA's analysis also shows the calculated net emissions increases related to the Proposed Action meet all parameters established by applicable State Implementation Plans for ozone. For VOC and NO_x, the total emissions (existing emissions plus Proposed Action increase) would be less than the allowable state SIP emissions budget. The PM_{2.5} and NO_x emissions increases that would result from the Proposed Action represent a small portion of the total existing and projected emissions and would decline over time, because of implementation of EPA emissions standards for locomotive engines and fuel sulfur restrictions (see Chapter 4, Section 4.9.3 and Table 4.9-22a).

To assess system-wide cumulative effects, SEA reviewed the technical analysis of potential air quality impacts from the Proposed Action and then reviewed the purposes of the regional related projects. SEA is satisfied that the activities proposed by the regional related projects were designed to enhance transportation efficiencies. CREATE was specifically developed to reduce freight train congestion within the Chicago area while facilitating reduced vehicle congestion. Commuter and passenger rail services would also be improved and expanded further reducing vehicular traffic. Finally, Amtrak is seeking to protect its current schedule by retaining trackage rights on the Air Line at current cost levels. It, too, provides mass transit opportunities which, in turn, could reduce vehicle traffic. In short, all of these related projects could create air quality benefits by increasing the availability of rail mass transit and more efficient vehicular and freight train movements within the Study Area. The

related projects would also experience decreased emissions because they would be subject to the EPA emissions standards for locomotives and motor vehicles.

Therefore, cumulative effect of these factors would tend to lower emissions and improve air quality

SEA's analysis of the direct effects on climate change from the Proposed Action concluded that it would contribute between 0.00009 and 0.00002 percent to the global CO₂ emissions in 2015, or approximately the CO₂ emissions output of 1,000 passenger vehicles (see Chapter 4, Section 4.9.7.2).

5.6.3 Conclusions

Based on the available information relative to the action and factors described above there would be potential for both increases and decreases in emissions of greenhouse gas emissions. The net effect on global climate change would be minimal.